

What is claimed is:

1        1. A speech coding system comprising:

2                an encoder that encodes candidate pulse positions to encode an  
3                excitation signal, where the candidate pulse positions are defined by at least one track;  
4                a decoder coupled to the encoder; and  
5                a circuit coupled with the encoder and the decoder, where the circuit  
6                includes an algorithm that dynamically allocates the at least one track.

1        2. The system according to claim 1 where the algorithm allocates the  
2                candidate pulse positions for the at least one track according to available information.

1        3. The system according to claim 2 where the available information  
2                includes information selected from the group consisting of signal type information,  
3                adaptive codebook information and determined pulse positions.

1        4. The system according to claim 3 where the algorithm determines a first  
2                fixed codebook if the signal type is approximately periodic and determines a second  
3                fixed codebook if the signal is non-periodic.

1        5. The system according to claim 4 where the first fixed codebook  
2                includes at least one track and the second fixed codebook includes at least one track.

1        6. The system according to claim 1 where the at least one track includes  
2                fixed candidate pulse positions.

1        7. The system according to claim 1 where the at least one track includes  
2                dynamically allocated candidate pulse positions.

1        8. The system according to claim 1 where the algorithm determines a  
2                position of a first pulse on the at least one track and then defines at least one candidate  
3                pulse position for the at least one track according to the determined pulse position of  
4                the first pulse.

1           9. The system according to claim 8 where the algorithm defines the at  
2           least one additional candidate pulse position near the determined pulse position for the  
3           first pulse.

1           10. The system according to claim 8 where the algorithm uses a pitch  
2           prediction contribution to derive at least one reference position of at least one main  
3           peak from a previously encoded signal to define the at least one additional candidate  
4           pulse position according to the at least one reference position.

1           11. The system according to claim 10 where the circuit further includes an  
2           energy measure algorithm to derive the at least one main peak.

1           12. The system according to claim 11 where the energy measure algorithm  
2           defines the at least one main peak at the position of the pitch prediction contribution  
3           including the highest energy.

1           13. A speech coding system comprising:  
2           a codec that includes an encoder and a decoder, the encoder encodes  
3           candidate pulse positions to encode an excitation signal, where the candidate pulse  
4           positions are divided into at least one track; and

5           a circuit coupled with the codec, where the circuit includes an  
6           algorithm to dynamically allocate candidate pulse positions according to available  
7           information.

1           14. The system according to claim 13 where the available information  
2           includes information selected from the group consisting of signal type information,  
3           adaptive codebook information and determined pulse positions.

1           15. The system according to claim 14 where the algorithm determines a  
2           first fixed codebook if the signal type is approximately periodic and determines a  
3           second fixed codebook if the signal is non-periodic.

1           16. The system according to claim 15 where the first fixed codebook  
2 includes at least one track and the second fixed codebook includes at least one track.

1           17. A method for dynamically coding a position of a pulsed signal in a  
2 speech coding system, comprising:

3                   determining a position of a first pulse on a first track;

4                   dynamically defining at least one candidate pulse position for a second  
5 track according to the determined position of first pulse on the first track; and

6                   determining a position of a second pulse on the second track according  
7 to the defined at least one candidate pulse position for the second track.

1           18. The method according to claim 17 further including defining the at  
2 least one additional candidate pulse position near the determined pulse position for the  
3 first pulse.

1           19. A method for dynamically coding a position of a pulsed signal in a  
2 speech coding system, the method comprising:

3                   determining a pitch prediction contribution from a past excitation  
4 signal;

5                   determining positions of main peaks according to the pitch predication  
6 contribution; and

7                   constructing candidate pulse positions for at least one dynamic track of  
8 a current sub-frame according to the determined positions of the main peaks.

1           20. The method of claim 19 further including defining candidate  
2 positions of a first pulse according to the constructed candidate pulse positions of  
3 the at least one dynamic track.

1           21. The method according to claim 19 further including using a pitch  
2 prediction contribution to derive positions of main peaks from a previously encoded  
3 signal.

22. The method according to claim 21 where the circuit further includes an energy measure algorithm to derive the main peaks.

23. The method according to claim 22 where the energy measure algorithm defines the main peaks at the positions of the pitch prediction contribution including the highest energies.